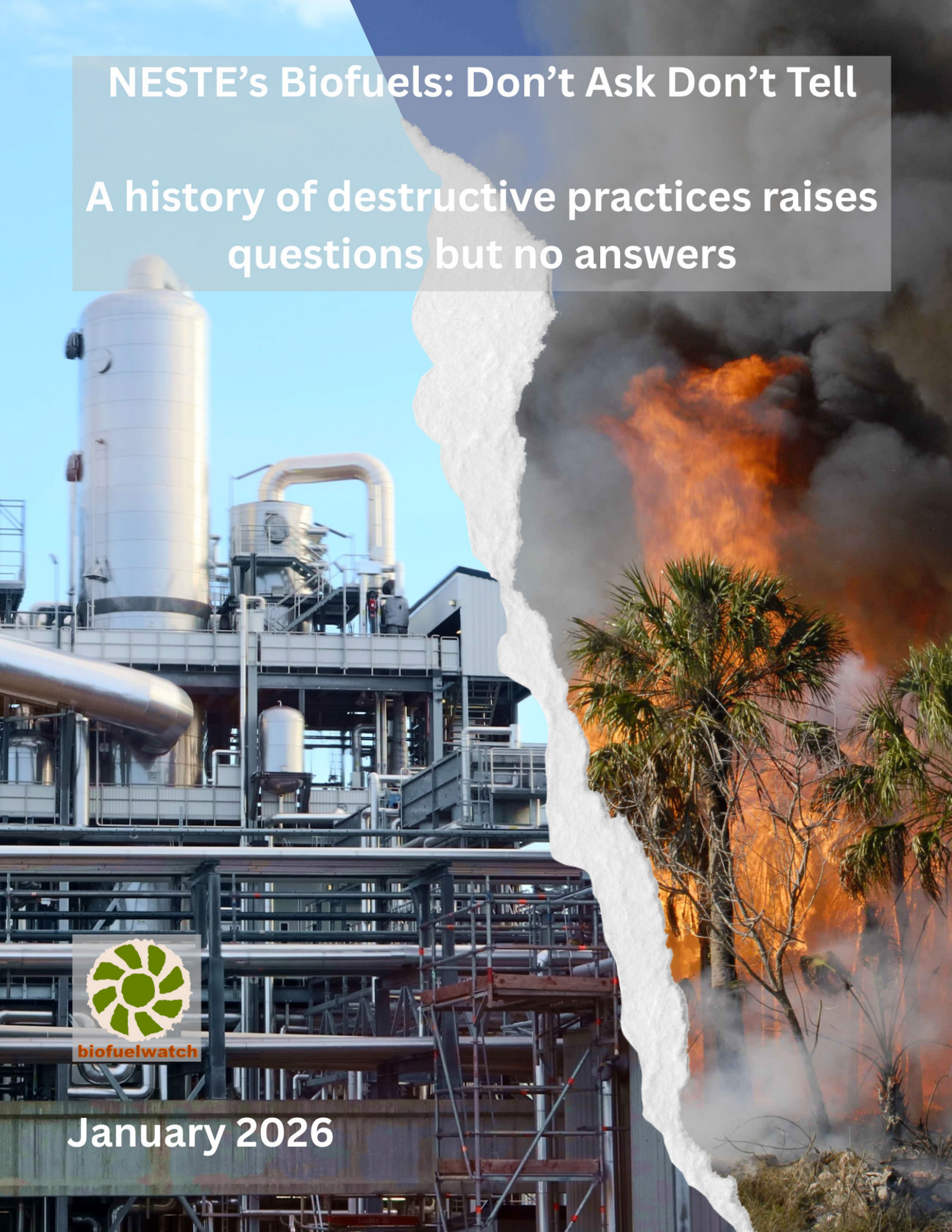
NESTE's Biofuels: Don't Ask Don't Tell

A history of destructive practices raises questions but no answers



biofuelwatch

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TOP LEVEL TAKEAWAYS

- **The Finnish oil company is in the process of transitioning to liquid biofuels, wreaking destruction on ecosystems in the Global South and communities in the Global North**
- **Their feedstocks include a variety of deforestation-driving and fraud-prone so-called 'residues'**
- **Despite the importance of transparency in this burgeoning and often environmentally damaging industry, Neste continues to withhold crucial information on feedstocks, refinery operations and more**
- **Meanwhile, they continue to profit from fossil fuels**

Neste Oyj, commonly known as Neste, is a liquid fuels refining and marketing company headquartered in Finland. Neste manufactures and refines a variety of oil products, provides engineering services, and has over the last 20 years moved aggressively into the global liquid biofuel sector. The company has operations in more than a dozen countries.

Neste stock is traded on the Helsinki stock exchange, with its largest shareholder being the office of the Prime Minister of Finland. Asset managers like Vanguard and BlackRock are also noteworthy institutional investors in Neste.

For the past decade Neste has increasingly focused on biofuels and bioplastics alongside fossil fuels, and since 2019 have expanded to become one of the world's largest biofuel suppliers, with their headquarters for this arm of their operations located in Singapore.

Why Singapore? Proximity to the world's largest oil palm markets - in Indonesia and Malaysia – suggests that it is a strategic location for convenient access to crude palm oil and palm fatty acid distillate, or PFAD (both key HVO feedstocks), from these deforestation-prone areas. Like other companies, Neste utilises PFAD as a feedstock for making products like 'renewable diesel' and 'sustainable aviation fuel.' Though PFAD is a consistent fraction of the production from virgin palm oil refining that contributes to the economics of palm plantation expansion, this commodity is marketed by Neste as a residue or waste, a key component of its assertion that

'Waste and residues account for over 90% of our renewable raw material inputs globally'.

Their other refineries in Rotterdam, Netherlands and Porvoo, Finland, might well have been better locations if this access to oil palm products was not their intention. The company takes an

interest in all biofuel use pathways, including road transport, aviation and shipping, and has contracts with a variety of airlines, shipping companies and air and seaports. Neste has emerged as one of the most important suppliers and manufacturers of the 'renewable diesel' biofuel product in California, including significant imports over time from the company's refinery in Singapore.

Neste tends to downplay their reliance on palm oil for making 'renewable diesel' to sell in jurisdictions like California. In fact, though, PFAD is actually a co-product which many experts categorise as a biofuel feedstock in its own right and which is a known driver, both directly and indirectly, of deforestation. Vegetable oil markets are very much interconnected, hence demand for one impacts the other: when used for biofuels instead of other traditional purposes, PFAD creates a spike in demand for crude palm oil to replace it in oleochemicals and other dependent industries. This is a problem because palm oil is one of the world's most deforestation-intensive commodities, displacing tropical rainforest, peat wetland and local communities.

Both the EU The European Renewable Energy Directive and the California Low Carbon Fuel Standard recognise these issues with palm oil and seek to limit and disincentivise its use. These restrictions however have not prohibited the sale and consumption in either Europe or California of Neste fuel products made from PFAD.

Despite the widely acknowledged damages from expanding palm oil (and derivative and coproduct demands), Neste insists on claiming that their biofuels are "sustainable", with certifications from the International Sustainability and Carbon Certification (ISCC) and the Roundtable on Sustainable Palm Oil (RSPO). Yet both of these certification bodies have been repeatedly shown to be highly unreliable, lacking independent monitoring or verification, captured by biofuel lobby interests, and frequently continue to certify producers even in the face of evidence of unsustainable practices.

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Neste in Singapore: A Case Study

Meanwhile, events at Neste's fifteen-year-old biorefinery in Singapore, a big PFAD purchaser, are opaque. A nineteen-hectare site expanded in 2023 to forty-five hectares and a 2.6 million tonne production capacity (encompassing aviation fuel for the first time), it produces polymers alongside biofuels. This expansion included the construction of a unit for making hydrogen, and cost Neste €1.6 billion overall. Currently, the most common method of hydrogen production is through steam reformation of methane - aka, fossil gas. Less than 1% of hydrogen produced in 2023 was green. Making HVO biofuel requires massive amounts of hydrogen, resulting in refinery emissions that are as high and even higher than when making fuel from petroleum.

The refinery's peak output seems to have coincided with all-time highs in imports to California of so-called 'renewable diesel', yet data shows that these imports tanked after the refinery suffered some kind of major issue in late 2024, further emphasising supply chain links between the two locations. The refinery incident was referred to as an 'equipment failure' in statements to the press, but never really explained further, meaning we are left to guess at details. Given that equipment failures at biorefineries have injured and even killed people, refusing to disclose this information seems reckless and irresponsible at best, and an attempt to cover up negligence at worst. Our best reviews of available data indicate that imports from the Neste Singapore refinery to California have not yet recovered to their 2024 peak, suggesting that maintenance issues are ongoing. A planned six-week maintenance period commenced in mid-2025. It is possible that domestic production in California is competing with the Singapore refinery, or that they are selling to nearer countries in Asia, but it seems likely that problems continue to arise with the refinery equipment. This highlights the ongoing technical limitations of the biofuel industry.

The facility has also provided biofuels for the backup generators of the ST Telemedia Global data centre in Singapore, at a time when many nations are turning to biomass and biofuels to meet the skyrocketing electricity demand of data centres. In a piece in the Straits Times, claims of future power to liquid fuels and microalgae feedstocks were reiterated. These have been touted by the biofuels lobby for decades without tangible results.

Many Neste oil palm product suppliers, including First Resources, Apical, IOI, Sinar Mas and Wilmar, have been implicated in deforestation and human rights abuses in Indonesia, where they operate within a convoluted web of subsidiary companies, obfuscating accountability and rendering it harder for local communities to seek redress. In their 2024 Annual Report, the company put across a vision of squeaky clean environmental credentials, emphasising the urgency of climate breakdown and their hopes to create a supply chain that boosts human rights and biodiversity in the coming decades. The truth, though, looks very different. According to Mighty Earth, in previous years Neste have sourced palm oil from suppliers with known track records for deforestation and dispossession. Meanwhile, monitoring group Eyes on The Forest records that at least one of the palm oil mills known to supply the PT Wilmar Nabati Indonesia Refinery in Padang, which sells its oil on to Neste, has been found to buy fresh fruit bunches from illegal plantations.

Group	Environmental issues			Social issues		Section
	Deforestation (ha)	Fire alerts	Peat destruction	Community rights violations	Labour rights violations	
Agro Inti Semesta		76				3.1
Anglo Eastern Plantations	> 11					3.4
Bukit Barisan Indah Prima				!		3.4
Bumitama Agri	1,077	936	!	!		3.6
Eagle High Plantations		1,412				3.7
First Resources	> 1,664	2,000		!		3.1
Gagah Putria Satria	1,215	978	!			3.8
Golden Agri Resources	!	926		!		3.2
Genting Plantations		765				3.9
Indofood Agri Resources	709	1,000			!	3.10
Julong Group	!		!			3.11
Kuala Lumpur Kepong		SA				3.12
MSAL Group	1,743	4,300	!			3.13
Musirawas	2,100					3.14
Palma Serasih	~ 2,000					3.15
QL Resources	57					3.16
Sime Darby Plantation		> 325; SA		!		3.17
Wilmar International				!		3.18
Total	**>10,576**	**>12,718**				

A list of Neste suppliers and their violations of regulation. Credit: MillieuDefensie In response to the accusations pictured above, Neste claimed there was 'no evidence' linking their supply chain to deforestation.

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Photo: View of Neste-Marathon Petroleum Company joint venture biofuel refinery in Martinez, California, in the San Francisco Bay Area (photo Gary Hughes/Biofuelwatch)

As part of our research, Biofuelwatch reached out to Neste to ask how much of their feedstock is made up of PFAD. Their initial reply made no mention of this substance at all, rather avoiding the question and pointing to

'used cooking oil, animal fat waste and various wastes and residues from vegetable oils processing'

which ***'represent the top three waste and residue raw material categories we use based on their current and estimated shares of Neste's total annual renewable raw material inputs.'***

We responded by reiterating our PFAD question, and they ultimately stated that

'we do not disclose the shares of single raw materials as they vary from year to year, from market to market and product to product depending on their availability, price, and specific market requirements, for example.'

It is therefore impossible for us to say confidently how much PFAD Neste are sourcing, but we can certainly assert that they are less transparent than they may wish to appear. This is a serious problem, as feedstock makeup impacts emissions, local air pollution and more. In the San Francisco Bay Area, Biofuelwatch and allied organisations are calling for total feedstock transparency from fuel producers as standard, in order to safeguard the environment and the wellbeing of local communities. It is our contention that this best practice should be expected in all locations and across the entire biofuel supply chain.

Photo; Infrared monitoring image of November 2023 fire at Neste-Marathon Petroleum Company joint venture biofuel refinery in Martinez, California. (credit Wood Mackenzie)

Yet, instead of demonstrating this openness, Neste is notably tight-lipped about not only their feedstocks but their refineries too. Their California biorefinery is registered to 'Martinez Renewable Fuels LLC', the name of its joint venture with Marathon Petroleum Company. This makes it very easy to avoid even being associated with the plant in the public consciousness -

useful given that the Martinez refinery was also the site of a tragic fire in 2023, resulting in life-changing injuries to one employee, which the US chemical safety board concluded was a result of lax safety standards. The refinery also continues to emit pollutants. Nonetheless, biofuel production is being encouraged in California due to the Low Carbon Fuel Standard (LCFS), an incentive mechanism which has hugely driven up the demand in California for HVO-based 'renewable diesel'. There is also a history of fire at Neste's Rotterdam biorefinery, and in 2024 local authorities imposed more stringent constraints on the plant as a result of a series of violations of environmental regulation.

While continuing to greenwash its destructive biofuel production practices, Neste retains a significant stake in the fossil fuel market. Last year it continued to earn more from fossil fuels than any other source of revenue. Although talks are underway to convert it to yet another biorefinery, Neste's Porvoo facility continues to work with petroleum. This demonstrates that, just like the performative gesture of dropping the 'oil' from their company name, Neste's forays into biofuels are a cure worse than the disease, designed to maintain economic relevance and profits.

Biofuelwatch provides information, advocacy and campaigning in relation to the climate, environmental, human rights and public health impacts of large-scale industrial bioenergy.

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